UNITED STATES PATENT AND TRADEMARK OFFICE

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10/682,536	10/10/2003	Scott A. Cummings	1875.4850000	9722

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EXAMINER
CHAN, SAI MING

ART UNIT	PAPER NUMBER
2462	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/682,536	CUMMINGS, SCOTT A.
	Examiner	Art Unit	
	SAI-MING CHAN	2462	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>01 September 2010</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1,2,6-13,17-26 and 30-45</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1,2,6-13,17-26 and 30-45</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
         application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail. Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.,* 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-2, 6-7, 9, 11-12, 37, 40 & 43 are rejected under 35 U.S.C. 103(a) as

being unpatentable over **Lind et al. (U.S. Patent Publication # 20040244043),** in view

of **Liva et al. (U.S. Patent Publication #20020136203).**

Consider **claim 1,** Lind et al. clearly disclose and show a method for improving

channel efficiency in a broadband communication system that complies with a Data

Over Cable Service Interface Specification (DOCSIS) standard, comprising:

establishing one or more proprietary logical channels for communication between
a first device that supports at least one proprietary communication parameter (fig. 2 (28
CMTS), fig. 11a (192 & 194)) and other devices that support said at least one
proprietary communication parameter (fig. 2 (42 CM), fig. 11a (192 & 194));

receiving registration information from a second device (para. 101), wherein said
registration information indicates that said second device supports said at least one
proprietary communication parameter (fig. 5a (102));

determining whether said second device may be assigned to one of said one or
more proprietary logical channels based on said registration information (fig. 5a (104),
paragraphs 119 & 120),

assigning said second device to said one of said one or more proprietary logical
channels when said second device may be assigned to said one of said one or more
proprietary logical channels (fig. 5a (102 and 104);

determining whether a predetermined number of currently registered devices
(para. 0004 (capacity), EN: when the channel capacity is full, there will be
corresponding number of devices registered. The predetermined number is simply the
number currently registered) support said at least one proprietary communication
parameter (para. 101 (what types of downstream channels in terms of the channel
parameters the extra CM tuners can receive), para. 120 (the downstream parameters
such as frequency, modulation type, interleaver depth, symbol rate, etc.) when said

second device cannot be assigned to said one of said one or more proprietary logical

channels (para. 0004 (capacity), EN: when the capacity is full).

However, Lind et al. do not specially disclose creating a new proprietary logical

channel.

In the same field of endeavor, Liva et al. clearly show creating a new proprietary

logical channel (para. 0012 (recabling to a new logical channel when capacity is

reached)).

Therefore it would have been obvious to a person of ordinary skill in the art at the

time the invention was made to demonstrate a channel efficiency method, as taught by

Lind, and create logical channels, as taught by Liva, so that communication can be

conducted efficiently.

Consider **claim 25,** is rejected for the same reason as set forth in claim 1 except

a computer program product (Lind: para. 0074) comprising a computer usable medium

having computer program logic (Lind: Para. 0074) recorded thereon for enabling a

processor (Lind: para. 0074) to facilitate communication between devices in a

broadband communication system (Lind: para. 0075) that complies with a Data Over

Cable Service Interface Specification (DOCSIS) standard (Lind: 0075 (DOCSIS)).

Consider **claim 2,** and **as applied to claim 1 above,**

   claim 26, and **as applied to claim 25 above,**

Lind et al. clearly disclose and show a method, wherein said first device comprises a
cable modem termination system (fig. 2 (28 CMTS)) and said second device comprises
a cable modem (fig. 2 (42 CM)).

    Consider **claim 6, and as applied to claim 1 above,**

        claim 30, and as applied to claim 25 above,

they are being rejected for the same reason as set forth in claim 1 except the UCD
messages (Lind: para. 0029 (UCD messages)).

    Consider **claim 7, and as applied to claim 6 above,**

        claim 31, and as applied to claim 30 above,

Lind et al. clearly disclose and show a method, wherein said generating of said UCD
message comprises generating a message having a version field or a type field (para.
0046) that comprises a value not provided for by the DOCSIS standard (para. 0002).

    Consider **claim 9, and as applied to claim 8 above,**

        claim 33, and as applied to claim 32 above,

Lind et al. clearly disclose and show a method, wherein said sending said UCD
message only to said devices that support said at least one proprietary communication
parameter comprises:

        accessing a database of identifiers of devices (Fig. 10 (182)) that support said at
least one proprietary communication parameter (fig. 10 (182 (parameters of each link)));

generating a unicast UCD message addressed to each of said devices having an

identifier in said database (paragraphs 25-29 (generate and transmit UCD message for

each upstream)).

Consider **claim 11**, and **as applied to claim 1 above,**

claim 35, and **as applied to claim 25 above,**

Lind et al. clearly disclose and show a method, wherein said receiving said registration

information from said second device comprises:

sending a first message to said second device to determine if said second device

implements any proprietary features (fig. 11a (192));

receiving a message from said second device, wherein said message indicates

support by said second device for said at least one proprietary communication

parameter (fig. 11a (194)); and

sending a second message to said second device, wherein said second unicast

message indicates support by said first device for said at least one proprietary

communication parameter (paragraphs 25-29 (generate UCD message)).

Consider **claim 12**, and **as applied to claim 1 above,**

claim 36, and **as applied to claim 25 above,**

they are being rejected for the same reason as set forth in claim 10.

Consider **claim 37, and as applied to claim 1 above,**

claim 39, and as applied to claim 25 above,

Lind et al. clearly disclose and show a method, wherein said at least one proprietary

communication parameter includes at least one of a group consisting of a modulation

rate, base rate, and an alpha value (fig. 5a (102,104), para. 0046).

Consider **claim 40, and as applied to claim 1 above,**

claim 42, and as applied to claim 25 above,

Lind et al. clearly disclose and show a method, wherein said at least one proprietary

communication parameter is not provided for by said DOCSIS standard (para. 0002).

Consider **claim 43, and as applied to claim 1 above,**

claim 45, and as applied to claim 25 above,

Lind et al. clearly disclose and show a method, further comprising:

assigning said second device to a standard DOCSIS channel when said

predetermined number of currently registered devices does not support said at least

one proprietary communication parameter (para. 0002 (point to multi-point linking),

para. 0019 (work as single DOCSIS channel CMs)).

Claims 8, 10, 32 & 34 are rejected under 35 U.S.C. 103(a) as being

unpatentable over **Lind et al. (U.S. Patent Publication # 20040244043),** in view of

Liva et al. (U.S. Patent Publication #20020136203), and **in view of Rakib et al. (U.S.**

Patent Publication # 20050025145).

Consider **claim 8,** and **as applied to claim 1 above,**

claim 32, and **as applied to claim 30 above,**

Lind et al. clearly disclose and show the method as described.

However, Lind et al. do not specially disclose sending the UCD messages to the

intended devices.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream

Channel Descriptor (UCD) message (paragraph 63) only to intended devices (figs. 9a,b

& c; paragraph 36).

Therefore it would have been obvious to a person of ordinary skill in the art at the

time the invention was made to incorporate a channel efficiency method, as taught by

Lind, and to send a UCD message to intended devices, as taught by Rakibet, in order to

show that the bandwidth efficiency is optimized.

Consider **claim 10,** and **as applied to claim 8 above,**

claim 34, and **as applied to claim 32 above,**

Lind et al. clearly disclose and show a method, wherein said sending said message only to said devices that support said at least one proprietary communication parameter comprises:

accessing an identifier that identifies a plurality of devices that support said at least one proprietary communication parameter (para. 0046 (CMTS sends out parameters of upstream); para. 0047 (CMTS receives messages from CM and store some of the data)); and.

However, Lind et al. do not specially disclose sending the multicast UCD message.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream Channel Descriptor (UCD) message (paragraph 62 (UCD)) a plurality of devices (figs. 9a,b &c; paragraph 36).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Lind et al., and to send a multicast UCD message, as taught by Rakib et al., in order to show that the bandwidth efficiency is optimized.

Claims 13, 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lind et al. (U.S. Patent Publication # 20040244043),** in view of **Liva et al. (U.S. Patent Publication #20020136203).**

Consider **claim 13,** it is being rejected for the same reason as set forth in claim

1, except:

a registration module (Lind: para. 0021 (receiving registration messages))

However, Lind et al. do not specially disclose channel manager and creating a

new proprietary logical channel.

In the same field of endeavor, Liva et al. clearly show channel manager (para.

0023 (dynamic channel assignment)) and creating a new proprietary logical channel

(paragraph 0066 (other channel supports legacy channel)) which supports said at least

one proprietary communication parameter (paragraph 0096 (each channel is

provisioned appropriately for each parameter)).

Therefore it would have been obvious to a person of ordinary skill in the art at the

time the invention was made to demonstrate a channel efficiency method, as taught by

Lind et al., and show channel manager and creating logical channels, as taught by Liva,

so that communication can be conducted efficiently.

Consider **claim 17,** and **as applied to claim 13 above,** Lind et al. clearly disclose

a CMTS, wherein said upstream channel manager (para. 0047 (use in controlling

upstream bursts)) is further configured to determine whether or not to establish said one

or more proprietary logical channels (para. 0004 (max. capacity), EN: when max.

capacity is reached, a new channel may be needed).

Consider **claim 18,** and **as applied to claim 13 above,** Lind et al. clearly disclose

a CMTS, wherein said upstream channel manager is further configured to generate a

UCD message (para. 0148 (send channel message to CM)) that includes said at least

one proprietary communication parameter (para. 0148 (channel parameters).

Consider **claim 19,** and **as applied to claim 18 above,** Lind et al. clearly disclose

a CMTS, wherein said generating of said UCD message comprises generating a

message having a version field or a type field (para. 0046) that comprises a value not

provided for by the DOCSIS standard (para. 0002).

Claims 20-24, 38, 41 and 44 are rejected under 35 U.S.C. 103(a) as being

unpatentable over **Lind et al. (U.S. Patent Publication # 20040244043),** in view of

Liva et al. (U.S. Patent Publication #20020136203), and further in view of **Rakib et al.**

(U.S. Patent Publication #20040181811)).

Consider **claim 20,** and **as applied to claim 18 above,** Lind et al. clearly

disclose and show the method as described.

However, Lind et al. do not specially disclose sending the UCD messages to the

intended devices.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream

Channel Descriptor (UCD) message (paragraph 63) only to cable modems that support

said at least one proprietary communication parameter (figs. 9a,b & c; paragraph 36).

Therefore it would have been obvious to a person of ordinary skill in the art at the

time the invention was made to incorporate a channel efficiency method, as taught by

Lind, and to send a UCD message to intended devices, as taught by Rakibet, in order to

show that the bandwidth efficiency is optimized.

Consider **claim 21,** and **as applied to claim 20 above,** Lind et al. clearly disclose

and show a method, wherein said sending said UCD message only to said devices that

support said at least one proprietary communication parameter comprises:

accessing a database of identifiers of devices (Fig. 10 (182)) that support said at

least one proprietary communication parameter (fig. 10 (182 (parameters of each link)));

generating a unicast UCD message addressed to each of said devices having an

identifier in said database (paragraphs 25-29 (generate UCD message)).

Consider **claim 22,** and **as applied to claim 20 above,** Lind et al. clearly disclose

a method, wherein said sending said message only to said devices that support said at

least one proprietary communication parameter comprises:

accessing an identifier that identifies a plurality of devices that support said at

least one proprietary communication parameter (para. 0046 (CMTS sends out

parameters of upstream); para. 0047 (CMTS receives messages from CM and store

some of the data)); and.

However, Lind et al. do not specially disclose sending the multicast UCD

message.

In the same field of endeavor, Rakib et al. clearly show sending the Upstream Channel Descriptor (UCD) message (paragraph 63) a plurality of devices (figs. 9a,b &c; paragraph 36).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a channel efficiency method, as taught by Lind et al., and to send a multicast UCD message, as taught by Rakib et al., in order to show that the bandwidth efficiency is optimized.

Consider **claim 23,** and **as applied to claim 13 above,** Lind et al. clearly disclose a CMTS, wherein said registration module is further configured to send a first unicast message to said cable modem to determine if said cable modem implements any proprietary features (para. 0046 (CMTS sends out parameters of upstream), to receive a message from said cable modem, wherein said message indicates that said cable modem supports said at least one proprietary communication parameter (para. 0047 (CMTS receives messages from CM and store some of the data)), and to send a second unicast message to said cable modem, wherein said second unicast message indicates that said CMTS supports said at least one proprietary communication parameter (fig. 2 (28 CMTS), fig. 11a (192 & 194)).

Consider **claim 24,** and **as applied to claim 13 above,** Lind et al. clearly disclose a CMTS, wherein said registration module is further configured to generate a unicast message to said cable modem identifying said logical channel (paragraphs 25-29 (generate UCD message)).

Consider **claim 38,** and **as applied to claim 13 above,** Lind et al. clearly disclose and show a CMTS, wherein said at least one proprietary communication parameter includes at least one of a group consisting of a modulation rate, base rate, and an alpha value (fig. 5a (102,104), para. 0046).

Consider **claim 41,** and **as applied to claim 13 above,** Lind et al. clearly disclose and show a CMTS, wherein said at least one proprietary communication parameter is not provided for by said DOCSIS standard (para. 0002).

Consider **claim 44,** and **as applied to claim 13 above,** Lind et al. clearly disclose and show a method, further configured to assign said second device to a standard DOCSIS channel when said predetermined number of currently registered devices does not support said at least one proprietary communication parameter (para. 0002 (point to multi-point linking), para. 0019 (work as single DOCSIS channel CMs)).

Response to Arguments

Applicant's arguments filed on 9/1/2010, with respect to claims 1 and 25, on pages 13-19 of the remarks, have been carefully considered.

In the present application, Applicants basically argue, that Lind does not teach or suggest "a predetermined number of currently registered devices support said at least one proprietary communication parameter". This is a broad limitation because "a predetermined number" could be interpreted as the current number of devices waiting for the channel when the channel is full. See the above rejections of claims 1 and 25, for the relevant interpretation and citations found in Lind et al., disclosing the new limitations.

Conclusion

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

> Commissioner for Patents
> P.O. Box 1450
> Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

> Customer Service Window

> Randolph Building
> 401 Dulany Street
> Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Sai-Ming Chan whose telephone number is (571) 270-1769. The Examiner can normally be reached on Monday-Thursday from 8:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 571-272-4100.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

/Sai-Ming Chan/

Examiner, Art Unit 2462

September 9, 2010

/Seema S. Rao/

Supervisory Patent Examiner, Art Unit 2462